

ABSTRACT OF THE DISCLOSURE

[0085] A biofilter media including grains having a hydrophilic nucleus and a hydrophobic coating, the hydrophobic coating includes microorganisms and also includes a metallic agent that both assist in the efficient breakdown of hydrogen sulfide (H_2S), other sulfur based compounds, such as reduced sulphur compounds, and both chlorinated and non-chlorinated volatile organic compounds. The metallic agent also increases efficiency during start-up of the biofilter media and in shock-loading conditions. The biofilter media is housed in a biofilter system that includes elements for the irrigation and humidification of the air stream of the biofilter media by steam or spray to ensure that the biofilter media is operating at appropriate temperature and moisture levels to avoid buildup of biomass or chemical deposits.